

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1-89. (Cancelled).

90. (Previously presented) A substrate coated with a water swellable gel coating comprising:

a substrate; and

a water swellable gel coating adhering to the substrate, wherein the gel coating includes a water swellable polymer and one or more antimicrobial metals formed with atomic disorder, and wherein the gel coating becomes antimicrobial and anti-inflammatory when wet.

91. (Previously presented) The coated substrate of claim 90, wherein the one or more antimicrobial metals is formed with sufficient atomic disorder such that, in contact with an alcohol or water-based electrolyte, the coating releases ions, atoms, molecules or clusters of the antimicrobial metal on a sustainable basis.

92. (Previously presented) The coated substrate of claim 91, wherein the water swellable polymer is a lubricious polymer to provide a lubricious coating on the substrate that becomes lubricious when wet.

93. (Previously presented) The coated substrate of claim 92, wherein the lubricious polymer is a hydrophilic polymer which is provided either in a powder form, or in a form coated with the one or more antimicrobial metals.

94. (Previously presented) The coated substrate of claim 93, wherein the lubricious polymer is one or more of cellulose and derivatives thereof, polyvinyl alcohol, starch, glycogen, gelatin, pectin, alginate, chitosan, chitin, gum arabic, locust bean gum, karaya gum, gum tragacanth, ghatti gum, agar-agar, carrageenans, carob gum, guar gum, and xanthan gum.

95. (Previously presented) The coated substrate of claim 93, wherein the lubricious polymer is selected from one or more of carboxymethyl cellulose, polyvinyl alcohol, and alginate.

96. (Previously presented) The coated substrate of claim 95, wherein the antimicrobial metal is one or more of Ag, Au, Pd or Pt, and wherein the antimicrobial metal powder is nanocrystalline.

97. (Previously presented) The coated substrate of claim 90, wherein the substrate is one or more of catheters, urinary catheters, in-dwelling catheters, drainage catheters, venous catheters, arterial catheters, central line and peripheral line catheters, cannulas, endoscopes, laparoscopes, sutures, staples, myringotomy tubes, wound or nasal packings, dressings, gauze, bone screws, halo screws, total joints, vascular grafts, hernia meshes, guide wires, needles, wound drains, pacemaker leads, condoms, contact lenses, peristaltic pump chambers, arteriovenous shunts, gastroenteric feed tubes, endotracheal tubes, gloves and implants.

98. (Previously presented) The coated substrate of claim 96, wherein the substrate is one or more of catheters, urinary catheters, in-dwelling catheters, drainage catheters, endoscopes, laparoscopes, myringotomy tubes, dressings, gauze, total joints, vascular grafts, hernia meshes, guide wires, needles, wound drains, pacemaker leads, condoms, contact lenses, peristaltic pump chambers, arteriovenous shunts, gastroenteric feed tubes, endotracheal tubes, gloves and implants.

99. (Previously presented) The coated substrate of claim 98, wherein the grain size of the antimicrobial metal powder is less than 50 nm.

100. (Previously presented) The coated substrate of claim 98, wherein the grain size of the antimicrobial metal powder is less than 40 nm.

101. (Previously presented) The coated substrate of claim 98, wherein the grain size of the antimicrobial metal powder is less than 25 nm.

102. (Previously presented) The coated substrate of claim 99, wherein the particle size of the antimicrobial metal powder is less than 100 μm .

103. (Previously presented) The coated substrate of claim 100, wherein the particle size of the antimicrobial powder is less than 40 μm .

104. (Previously presented) The coated substrate of claim 101, wherein the particle size of the antimicrobial powder is less than 10 μm .

105. (Previously presented) The coated substrate of claim 102, wherein the amount of the antimicrobial metal in the coating when wet is in the range of 0.001 to 30 wt%.

106. (Previously presented) The coated substrate of claim 104, wherein the amount of the antimicrobial metal in the coating is in the range of 0.01 to 5 wt %.

107. (Previously presented) The coated substrate of claim 104, wherein the amount of the antimicrobial metal in the coating is in the range of 1 to 3 wt %.

108. (Previously presented) The coated substrate of claim 107, wherein the antimicrobial metal is Ag, formed as a composite with oxygen.

109. (Previously presented) The coated substrate of claim 90, wherein the coating includes one or more agents selected from preservatives, texturizing agents, thickeners, anticoagulants, β -glucan, hormones, hyaluronic acid, cytokines, and bone morphogenetic proteins, in a therapeutically acceptable amount.

110. (Previously presented) The coated substrate of claim 108, wherein the coating includes one or more agents selected from preservatives, texturizing agents, thickeners, anticoagulants, β -glucan, hormones, hyaluronic acid, cytokines, and bone morphogenetic proteins, in a therapeutically acceptable amount.

111. (Previously presented) The coated substrate of claim 108, wherein the coating includes one or more agents selected from methyl paraben, propyl paraben, polyvinyl alcohol, heparin, β -glucan, epidermal growth factor, platelet derived growth factor, and transforming growth factor, in a therapeutically acceptable amount.

112. (Currently amended) The coated substrate of claim 90, wherein the coating includes less than 0.01 % wt of glycerin, glycerols, chloride salts, aldehydes, ketones, long chain alcohols and triethanolamine.

113. (Currently amended) The coated substrate of claim 111, wherein the coating includes less than 0.01 % wt of glycerin, glycerols, chloride salts, aldehydes, ketones, long chain alcohols and triethanolamine.